



Incorporating Environmental Justice Principles into the CERCLA Process

May 1998

U.S. Department of Energy
Office of Minority Economic Impact
Executive Director for Environmental Justice
and the
Office of Environmental Policy & Assistance
Washington, D.C.

I. INTRODUCTION

Environmental justice (EJ) is **equal protection under all environmental statutes and regulations** regardless of race, ethnicity or socioeconomic status. It includes equal participation in the decision-making process, and equal access to relief from existing environmental burdens.

On February 11, 1994, President Clinton issued an Executive Order 12898 on ***Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations***, which requires all Federal agencies to make environmental justice part of their missions. He used a companion ***Memorandum to the Heads of Federal Agencies*** to note the role of existing Federal law in achieving environmental justice in Federal programs and activities, emphasizing that **“existing environmental and civil rights statutes provide many opportunities to address environmental hazards in minority communities and low-income communities.”**

The basic thrust of the Order itself is **not** to require the development of new programs to address environmental justice concerns, although it does require certain implementing activities and organizational infrastructure. Rather, the Order aims to make sure that low-income and minority **communities play a meaningful role** in agencies' impact analyses and decision-making. Also, the Order makes specific reference to the National Environmental Policy Act (NEPA), but not to CERCLA. As stated in the Secretary's Policy on NEPA (June, 1994), the Department integrates NEPA values into its CERCLA response processes, such as analysis of cumulative, off-site, ecological, and socioeconomic impacts, to the extent practicable. The NEPA Policy also commits the Department to take steps to ensure opportunities for early public involvement in the CERCLA process and will make CERCLA documents available to the public as early as possible.

The **guidance** presented here calls attention to activities within the CERCLA response processes where data gathering, analyses, or procedures may need to be extended or added to help achieve environmental justice.

The guidance first summarizes how environmental justice and CERCLA intersect, especially how environmental justice issues may arise during the Department's CERCLA response processes. Next, specific steps in the CERCLA response process are presented, and DOE and EPA field experiences illustrate the challenges and solutions that have been encountered in actual CERCLA activities. A pre-planning checklist, designed for use prior to undertaking any kind of project, is included as an appendix. While the checklist is not a substitute for thoughtful examination of the potential ramifications of Departmental actions, it is offered as a useful tool for initiating that process. Finally, a list of resources and recommended reading is included for further information.

Environmental justice concerns for the Department are centered in the large-scale site cleanup efforts and in energy resource development challenges (e.g., fossil fuels, renewable resources, and energy efficiency initiatives) that will require the Department to consider the equitable distribution of cleanup and development burdens and benefits. A strategy to guide the Department's environmental justice activities includes these key goals:

- Identify and address programs, policies, and activities of the Department that may have disproportionately high and adverse human health or environmental effects on minority populations and low-income populations
 - Enhance the credibility and public trust of the Department by making public participation a fundamental component of all program operations, planning activities, and decision-making
 - Improve research and data collection methods relating to human health and the environment of minority and low-income populations by incorporating full characterizations of risks, including the identification of differential patterns of subsistence consumption of natural resources among such populations
 - Further Departmental leadership by integrating environmental justice criteria, as appropriate, with activities and processes related to human health and the environment
-

II. EXECUTIVE ORDER 12898 & THE CERCLA CLEANUP PROCESS

Each of the substantive areas identified in the Executive Order on Environmental Justice emerge as potential issues at various points in the CERCLA response processes:

- distribution of impacts and benefits
- data collection and analysis, including differential patterns of fish and wildlife consumption and multiple and cumulative effects
- public participation and access to information.

Each of these areas is summarized briefly below:

Distribution of Impacts/Benefits

Among the earliest to be recognized and most familiar environmental justice concerns is the imposition of **disproportionate adverse impacts** on low-income and minority communities. These impacts arise from activities, such as siting new facilities or starting new projects -- including cleanups -- that have potentially adverse environmental consequences. Among DOE programs, new facility siting is likely to be restricted to locales where the Department has been present for many years, and new projects aim to reduce long-term environmental risk. Transportation activities may be a high profile public concern.

While the CERCLA response process is focused on individual sites, the allocation of resources among known sites -- prioritization -- is a relevant consideration with significant environmental justice implications. Questions emerge about whether sites in low-income and minority areas receive fair treatment in prioritization and cleanup standards.

In a program like CERCLA remediation, where the long-term focus is on the removal of harmful impacts from the environment, the additional question of the **fairness in distribution of the benefits from its activities** must be considered.

Data Collection and Analysis, Including (1) Differential Patterns of Fish and Wildlife Consumption and (2) Multiple and Cumulative Effects

Conditions giving rise to environmental justice concerns are specific to individual communities and their histories. Contributing factors may not be related to the current site cleanup, but are relevant to its impact on the health of the community.

- The possible existence of additional **unaddressed hazardous waste** sites is a common concern among environmental justice communities. This may potentially be an issue for DOE's Uranium Mill Tailings Remedial Action program, but is probably not a significant concern for most of the DOE complex.
- Some potential **exposure pathways are more prevalent** in low income community settings, such as a relatively substantial reliance on fishing or hunting for food, leading to much higher exposures to bioaccumulating toxins than in the general population. These exposures may occur over long periods of time and have cumulative impacts.
- Some low-income jobs are more likely to expose workers to **unsafe working conditions**, and may increase the chances of exposures from multiple sources. The occurrence of **multiple and cumulative exposures** resulting from the spectrum of hazards in communities where there are multiple sites further complicates risk calculations.

Public Participation and Access to Information

CERCLA response processes require public participation at several junctures. Public participation activities offer particularly good opportunities for addressing environmental justice situations. For people in low-income and minority communities, several concerns may inhibit effective participation.

- **Language** may be the most obvious barrier in minority communities. Communities that are predominantly non-English-speaking tend to be isolated and avoid participation altogether. When non-English-speaking minority communities do become involved, the language barrier adds layers of complexity to exchanges during public meetings, community canvassing, and written communications; and in obtaining access to programs for assistance in understanding technical issues.
- **Cultural differences** can derail otherwise effective public participation activities. Failure to recognize and accommodate cultural norms of affected communities can diminish or effectively negate efforts to establish communication and can breed resentment and distrust.
- Multiple response actions required by multiple sites within low-income and minority communities represent significant **long-term burdens** on already stressed communities. These residents are at special risk from the environmental threats at sites, and have tended to be overlooked in past efforts to encourage public participation in decision-making at CERCLA response sites.
- Establishing **trusting relationships with these communities** frequently requires targeted efforts beyond accommodation of language and cultural differences to overcome a legacy of skepticism and suspicion. Building solid, trust-based relationships from the early stages of the first remedial process actions has long-term benefit for both the community and DOE.
- Multiple remedial actions within a community can lead to "**participation fatigue**" in the community. Normal daily obligations to family, work, and community may be demanding enough that it is difficult to answer the repeated call for public participation. Designing meetings to combine discussions on several actions may be a partial solution to address this issue.
- Concerns that are not part of the remedial process may surface during public participation meetings. These **issues can be significant enough to divert attention** away from central cleanup issues.

Anticipating these collateral issues and demonstrating a willingness to create appropriate resolution processes has a long-term benefit for both the community and DOE.

III. Environmental Justice Considerations During Specific Phases of CERCLA Response Actions

As shown in Figure 1, at least three distinct sets of response actions are authorized by CERCLA:

- Removal Actions
- Remedial Actions
- Natural Resource Damage Assessments

The opportunities for Federal actions to address environmental justice are specific to each of these authorized sets of CERCLA responses.

Removal Actions

Removal actions (40 CFR 300.415) are **rapid response** cleanup activities undertaken to eliminate, minimize or mitigate the threat of a hazardous substance release. They involve several phases:

- notification or discovery
- site evaluation
- action memorandum
- response action
- site closeout
- post-removal site control.

Environmental justice considerations are secondary to **significant adverse health effects as determining factors** in whether a set of circumstances is of sufficient urgency to require a time-critical removal action.

Some removal actions, however, are not time-critical. A streamlined risk evaluation process is recommended in these instances to help determine what type of removal action will be necessary, whether available technologies can be successful in interrupting the exposure pathway, and how best to reduce the risks

associated with the removal action itself.

When the removal action is not time-critical, the streamlined risk evaluation process has a public participation component, and can be used to help reduce the short-term risks of implementing the non-time-critical removal, and in evaluating environmental justice implications of risk after the response action is taken.

In the case of time-critical removal actions, staff developing the action memorandum should consider differential patterns of consumption that may lead to exposure; the presence of other sources of exposure to contaminants; or a community history that indicates the likelihood of cumulative exposures in determining the proposed response.

Remedial Actions

Remedial actions (40 CFR 430(3)) are **the long-term response actions** required under CERCLA. They are conducted in several phases, each of which includes several activities. For the purposes of this guidance document, however, only those activities in which environmental justice concerns are likely to emerge are treated. Where site impacts are such that environmental justice situations exist, they are likely to manifest themselves in activities related to assessment, exchange of information, and remedy selection. The sections below discuss the possibility of environmental justice concerns and provide examples of strategies used by several DOE sites and EPA Regions.

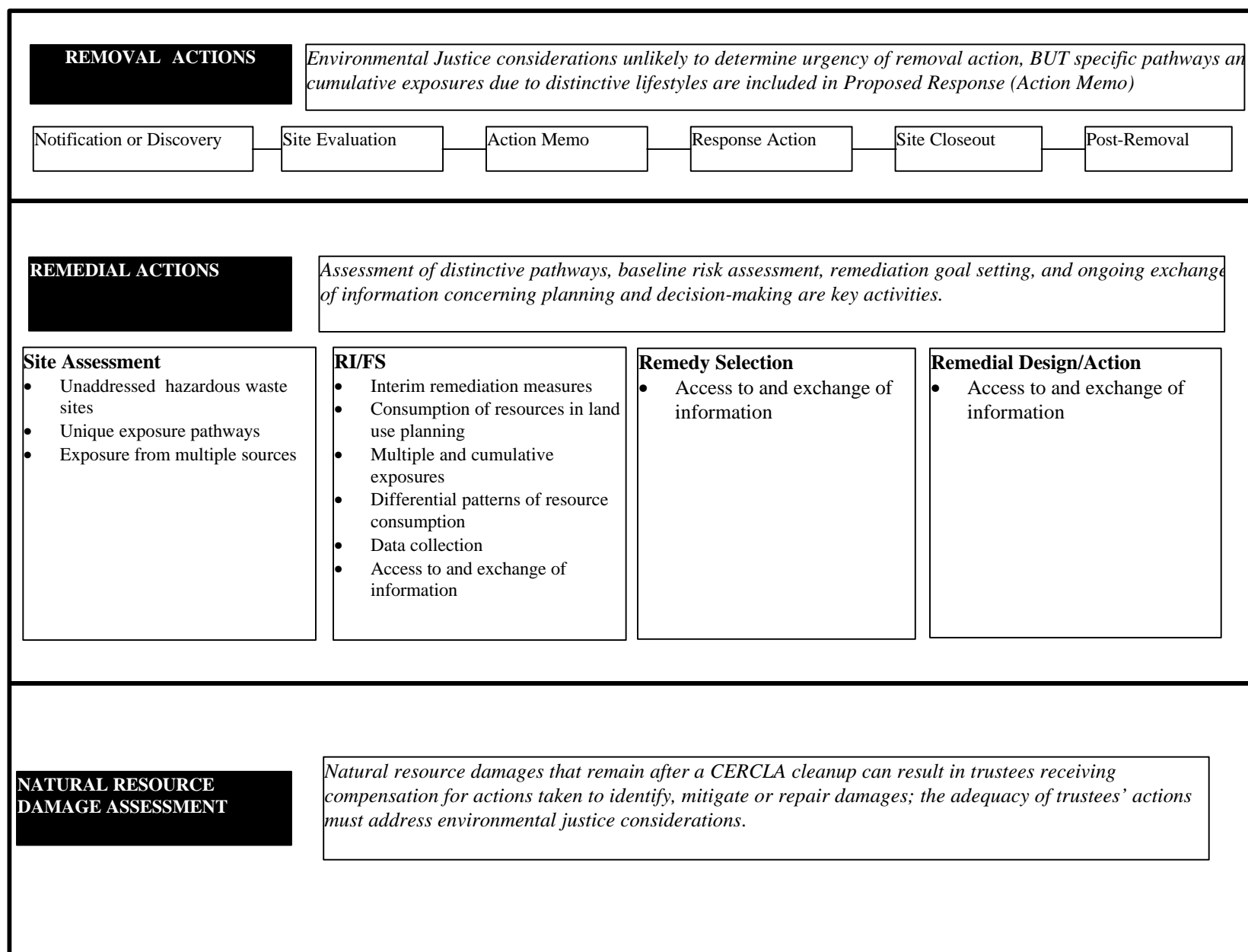
Strategies to address community concerns during site assessment have been used by EPA at several Superfund sites. They include

- establishing a satellite office or information repository near the site
- distributing fact sheets
- conducting door-to-door surveys and results presentation
- holding open houses.

EPA's Region 6 identified open houses and door-to-door surveys as the two most successful strategies.

EPA's Region 5 is using environmental justice concerns as a qualifier in the site screening/criteria model to assist in establishing priorities within the Region's Superfund program. In addition, Site Assessment Teams (SATs) and the Regional Decision Teams (RDT) routinely factor environmental justice concerns into their assessments and decisions.

Figure 1. Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) “Superfund” – Authorized Actions
Opportunities for Federal Actions to Address Environmental Justice



Site Assessment

The site assessment phase of the CERCLA remediation process consists of

- site discovery
- a preliminary assessment, in which existing site information is reviewed
- a more intensive site study, or sensitivity and uncertainty analysis of existing data
- the site inspection, in which potential for the site to warrant listing on the NPL is assessed
- evaluation of site data through the Hazard Ranking System to determine risk of potential National Priority List (NPL) sites.

The **preliminary assessment** should include an investigation of the potential for environmental justice issues. Differential patterns of consumption of fish and wildlife or plants that introduce otherwise unanticipated pathways and the potential for increased risks due to multiple and cumulative exposures are environmental justice situations that can alter the outcome of the site assessment. Where low-income or minority or Tribal communities are potential receptors to suspected contamination, data collection activities should reflect any unique or heightened exposure routes to these groups. A common concern among environmental justice communities is that many potential hazardous waste sites within their communities are undiscovered and remain unaddressed. Information gathered during the site assessment phase can be helpful in addressing those concerns.

Remedial Investigation / Feasibility Study (RI/FS):

The remedial investigation phase consists of:

- scoping
- site characterization
- treatability studies

The feasibility study develops alternatives and compares the advantages and disadvantages of each according to set criteria. During **scoping** and **site characterization**, the potential environmental justice concerns identified during the site assessment can be more fully evaluated,

and, if confirmed, potential remedies explored. In addition, identification of applicable or relevant and appropriate requirements (ARARs) begins. Scoping activities lead to the initial identification and prioritization of remedial activities. The results of the **contaminant pathways** and **baseline risk assessments** during site characterization serve to confirm or eliminate environmental justice concerns related to health and environmental impacts. The existence of confirmed environmental justice impacts may alter the nature and priority of activities at the site proposed during the feasibility study.

For example, the final results of the proposed site cleanup activities may benefit low-income and minority communities as well as the general population. However, in such an instance, specific targeted actions, beyond those required to protect the general population, may be required to mitigate disproportionate impacts either in the long term or until the cleanup is complete.

Remediation goal setting is also a part of the scoping process. It will be strongly influenced by decisions on future land and resource use for the site. Environmental justice concerns likely to arise during such discussions are **differential patterns of consumption** of fish, wildlife and native plants, and **language and cultural differences in communication**.

A river near a cleanup site has been determined to be contaminated, prompting the closing of the river to fishing until the contamination is eliminated from the water and eventually the food chain. For sport fishers, this action puts a temporary halt to an enjoyable recreation activity in the interest of safety. However, the action also closes off an important food source for some low-income families in the area who count on fishing.

In addition to explaining in understandable terms the health and safety reasons for closing the river to fishing, appropriate mitigation activities might also acknowledge the disproportionate impact of the contamination on subsistence fishers, and target health studies, and surveillance of health status for children and the elderly.

Although the Executive Order on environmental justice is not itself an ARAR, environmental justice laws that have been promulgated in several states are potential ARARs and therefore, consideration of environmental justice issues in those states becomes a legal requirement.

The product of the scoping phase is the **Work Plan**. In addition to the technical activities

required to remedy the contamination, the Work Plan includes the *Health and Safety Plan* and *Community Relations Plan*.

As part of an effort to document potential contamination sources connected with the Columbia River, Hanford has undertaken a study with assistance from technical staff from area Tribes. Researchers are meeting with Tribal technical staff to document unique consumption patterns arising from religious and traditional eating patterns. This is a complex undertaking, as care must be taken to acknowledge changes in circumstances that limit the application of historical data to current or projected patterns. Documenting traditional use patterns depends on direct and extensive involvement of community members, as data records are likely to be incomplete, and will benefit from the insights and experiences of community members.

The *Health and Safety Plan* documents potentially hazardous operations and exposures and details plans for ensuring that the health and safety of site workers, the surrounding community, and the environment. The plan includes, at a minimum, employee training and protective equipment, medical surveillance requirements, standard operating plans, and contingency plans.

Greater emphasis has been placed on the health and safety of all workers at DOE cleanup sites since the mid-1990's, and incorporating environmental justice requires an additionally heightened awareness of the potential for greater risks to members of low-income and minority communities surrounding the sites and working at the sites.

In communities where environmental justice is an issue, potential exposure from the site is likely to represent only part of the total exposure of the surrounding community. Front-line cleanup activities at the sites in the area may represent much needed well-paid job opportunities for members of low-income communities surrounding them. The Health and Safety Plan development should include consideration of this potential for multiple and potentially cumulative exposure.

DOE engages neutral, external organizations such as the Agency for Toxic Substances and Disease Registry (ATSDR) to conduct epidemiological studies of workers and members of communities surrounding their sites. Medical surveillance data

collected during CERCLA activities are useful in conducting studies by these organizations. Including information that will permit analysis of exposures and health effects on minority and low-income workers will facilitate the conduct of studies addressing environmental justice questions.

The **Community Relations Plan (CRP)** documents community concerns about the site, the objectives of the plan, and the actions planned to achieve the objectives. Development of the CRP is one of the major public participation activities generally included in both the removal and remediation processes. It is revised after remedy selection to reflect community concerns raised during comment periods. The plan includes

- lists of various appropriate opportunities for the community to participate in site-related decisions including site analysis and characterization, alternatives analysis, and remedy selection
- locations for information repositories and public meetings
- a summary of the site conditions and history, as well as a chronology of past community involvement.

Preparation of the plan includes personal interviews with representatives from various segments of the community (community residents, local officials, public interest groups, and other groups as appropriate) to determine community preferences related to public participation. These interviews are an important opportunity to identify environmental justice concerns. In addition, these interviews offer an important opportunity to establish contact with members of communities who have historically been excluded from the decision-making process.

The process issues that emerge in communities where environmental justice concerns exist will be

- language barriers
- cultural differences
- the recurrent nature of public participation activities because of multiple sites affecting a single population.

The general level of response from communities where environmental justice concerns exist tends to vary depending upon interest and the degree of organization within the community. The question of who represents the community can be an underlying issue, suggesting that DOE personnel preparing the CRP should be alert to segments of the community not involved in active, well-organized groups, and ensure that they are included in the CRP interviews. In addition, non-site related community issues may disrupt or overshadow discussions and cannot be ignored.

CERCLA requires that sites establish an **Information Repository** near the site as part of the CRP. The Repository contains such documents as site work plans, results of site studies, the proposed cleanup plan, and any special reports developed for the site. The information repository also includes instructions on how to apply for a technical assistance grant.

Many sites have found it useful to have technical specialists publicly available to help explain cleanup activities at the site. Community members have been polled in the vicinity of the Savannah River and Hanford Sites, and report that they are more likely to trust technical information received from site workers because they lived in the area and would be subject to the same exposures.

Similar findings come from polls of residents along key transportation corridors that DOE may use to transport hazardous materials as part of its site cleanup efforts.

In some instances, an Information Repository has been established at a local library where there are environmental justice issues.

It is especially important to ensure that low-income and minority communities and the Tribes that are not actively involved in site activities are aware that technical assistance grants are available and that they have information on applying for the grants. CERCLA requires that this information is included in the information repository, but groups may need assistance in applying for the grants. In some instances, community members are more trusting of site rather than outside experts because they are members of the community and subject to impacts from the site. This was the situation reported by DOE staff at the Savannah River Site.

Potential environmental justice concerns center around access to and exchange of information. Barriers to information exchange may include location, language, literacy, and a need technical assistance. Ensuring full access to all members of the surrounding community may require making translations, providing assistance in applying for technical assistance, or adding other Information Repositories.

Feasibility Study:

A general screening of technical options identifies those that can be implemented at the site. At this general screening level, it is useful to take into consideration the approximate duration of anticipated treatment requirements, for life cycle costing purposes. It is also appropriate to consider technology or process maturity in the initial screening of technical options.* Practicable options are then subjected to a detailed evaluation according to nine criteria, which are grouped as **threshold criteria** (2), which must be met; **balancing criteria** (5), which are used to assess tradeoffs among the various options; and finally **modifying criteria** (2), which consist of State and public comment and may modify the remedy selection. Throughout the analysis, technical staff should maintain an awareness of environmental justice concerns raised earlier in the process and the potential impact of each alternative.

Remedy Selection:

During the remedy selection phase, the preferred solution identified through the feasibility study is presented to the public as the Proposed Plan along with the RI/FS itself for comment. The comments received are considered, and a decision is made on whether the remedy proposed is still the most appropriate solution. Selection of the final remedy is documented in the record of decision (ROD).

The Proposed Plan is included in the information repository with other site documents. It explains

* See D.R. Anderson, M.E. Fewell, L.S. Gomez et al., 1997, "Performance Assessment for Environmental Decision Making," SAND97-0723C. Albuquerque: Sandia National Laboratories, for a description of one productive approach to general screening of technical options.

the threat to human health and the environment at the site, summarizes and explains key aspects of the RI/FS and solicits public comment. Environmental justice concerns found at the site and how they were addressed in selecting the proposed remedy should be included in the Proposed Plan.

Around the DOE complex, sites have experimented with a number of approaches designed to maximize the inclusiveness of their public participation activities:

Baseline Knowledge and Values:

- focus groups
- phone and mail surveys

Notices and Documents for Comment:

- publishing in minority and free papers as well as major local newspapers
- discussions on local radio talk shows,
- Meetings:
video tapes of important meetings,
more informal distributed meetings rather than a few centralized gatherings.

Reports and Educational Activities:

- involvement of minority educational institutions in development
- reduction or elimination of technical jargon in public documents
- working through local churches and elected officials in prioritization activities
- educational workshops such as radiological risk.

During the comment period, the potential environmental justice issues include barriers to information access, such as language, literacy, cultural differences, physical location of meetings or the information repository. The Community Relations Plan should include provisions necessary to overcome identified access barriers during the comment period. Such provisions include, but are not limited to

- **translation** of documents and translators to assist at meetings where appropriate
- use of ethnic or local **newspapers** to publish the Proposed Plan
- use of **radio** to present and explain the remedy and the reasoning behind it
- locating **public meeting sites in locations accessible** to the affected low-income,

minority, and Tribal communities

- a sensitivity to the cultural norms of the community where public meetings are being held.

The ROD documents the final remedial action plan for the site. It sets forth not only the planned activities, but the entire process by which the decision was made and the bases for making it. The ROD contains three sections:

- The **declaration** makes it legally binding.
- The **decision summary** provides an overview of the problems and risks, the alternatives evaluated, and statutory requirements and performance goals met.
- The **responsiveness summary** directly addresses comments received from the public, which provides DOE with information on public preferences and shows the public how their comments were included in the analysis.

The decision summary should include environmental justice concerns identified at the site and how they were addressed, and a justification where they were not mitigated. Sensitivity to barriers to communication and cultural differences that have been discussed earlier needs to be maintained in preparing the responsiveness summary.

Remedial Design/Remedial Action

During engineering design and implementation activities for the selected remedy, public participation activities continue. The Community Relations Plan is further revised to reflect emerging citizen concerns and involvement. Continued communications allow the community to remain apprised of the status of the cleanup and learn about the engineering design. Public participation mechanisms provide the public with the opportunity to express concerns that may arise about the remedial design or that result from remedial activities.

During the RD/RA phase the effectiveness of the solutions to existing environmental justice situations and mitigation efforts for those anticipated to result from remediation activities will be determined. Comments and concerns

expressed by low-income and minority community members should be monitored for unanticipated impacts.

Natural Resource Damage Assessments

Natural resource damage assessments **identify injuries** (i.e., harm) to natural resources and **appraise damages** (in financial terms) to natural resources that result from releases of CERCLA substances to the environment. Damages can be assessed for

- injuries to resources that have occurred since the passage of CERCLA in 1980
- costs of the assessment and planning for restoration or mitigation, and
- restoration or mitigation itself.

An **injury** to a natural resource is a measurable adverse change in the chemical or physical quality or viability of that resource. **Damages** are assessed on the basis of loss or reduction in quantity and quality of natural resource services. Resource **services** are physical and biological functions performed by the natural resources, including human uses of those services and services to other resources and ecosystems. Examples of resource services include habitat, food, recreation, aesthetic value, drinking water, flood control, and waste assimilation. Damages represent the dollar value or the economic loss resulting from the injury. Damages assessed are **residual** damages (i.e., damages that are not or cannot be addressed by the remedial or corrective action or result from such actions).

When residual injury occurs because the quantity and/or quality of the original natural resources cannot be fully restored or mitigated, a natural resource **trustee** (DOE, authorized representative of an affected State, or an affected Indian Tribe) can recover natural resource damages from the potentially responsible party, if statutory conditions are met. In the event that citizens do not feel that the trustees have adequately protected their interests with respect to natural resources, they can sue both the trustee and the responsible parties for all costs required to assess the damage, to plan for restoration and/or mitigation, and for restoration and/or mitigation activities.

A natural resources damage claim must be based strictly on a loss or injury to a natural resource. The measure of damages is the value of "services" lost or interrupted, and not the disproportionate burden that one group or groups may bear as a result. The value of the services, of course, may differ by cultural and ethnic background, and such variation may need to be taken into account in assessing damages.

For the purposes of avoiding environmental justice-related impacts, good planning is the best approach. Early natural resource surveys, inclusion of resources as potential receptors in site conceptual modeling, and the performance of ecological risk assessments can provide a greater understanding of some potential natural resource injuries. Information about potential injuries can therefore be used to plan mitigation measures for the remedial phase. When properly implemented, such measures can reduce or eliminate the potential for unplanned cost growth due to residual damages from the release or the response actions.

For Further Information Contact:

Georgia Johnson
Executive Director for Environmental Justice
U.S. Department of Energy
1000 Independence Avenue, SW, Room 5B110
Washington, DC 20585
Phone: (202) 586-1593
Fax: (202) 586-3075
e-mail: Georgia.Johnson@hq.doe.gov

Melanie Pearson
Ofc of Environmental Policy & Assistance (EH-41)
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585
Phone: (202) 586-0939
Fax: (202) 586-0955
e-mail: Melanie.Pearson@eh.doe.gov

Appendix A

ENVIRONMENTAL JUSTICE PUBLIC PARTICIPATION CHECKLIST FOR GOVERNMENT AGENCIES*

1. Ensure that the Agency's public participation policies are consistent with the requirements of the Freedom of Information Act, the Emergency Planning and Community Right To Know Act and the National Environmental Policy Act.
2. Obtain the support of senior management to ensure that the Agency's policies and activities are modified to ensure early, effective, and meaningful public participation, especially with regard to Environmental Justice stakeholders. Identify internal stakeholders and establish partnering relationships.
3. Use the following Guiding Principles in setting up all public meetings:
 - Maintain honesty and integrity throughout the process
 - Recognize community and indigenous knowledge
 - Encourage active community participation
 - Utilize cross-cultural formats and exchanges
4. Identify external Environmental Justice stakeholders and provide opportunities to offer input into decisions that may impact their health, property values and lifestyles. Consider at a minimum individuals from the following organizations as appropriate:

<ul style="list-style-type: none"> • Environmental organizations • Business and trade organizations • Civic/public interest groups • Grassroots/community-based organizations • Congress • Federal agencies • Homeowner and resident organizations • International organizations • Labor unions • Local and State government 	<ul style="list-style-type: none"> • Media/Press • Indigenous people • Tribal governments • Industry • White House • Religious groups • Universities and schools
--	---
5. Identify key individuals who can represent various stakeholder interests. Learn as much as possible about stakeholders and their concerns through personal consultation, phone or written contacts. Ensure that information gathering techniques include modifications for minority and low-income communities (for example, consider language and cultural barriers, technical background, literacy, access to respondents, privacy issues, and preferred types of communications).
6. Solicit stakeholder involvement early in the policy-making process, beginning in the planning and development stages and continuing through implementation and oversight.
7. Develop co-sponsoring/co-planning relationships with community organizations, providing resources for their needs.
8. Establish a central point of contact within the Federal agency to assist in information dissemination, resolve problems, and to serve as a visible and accessible advocate of the public's right to know about issues that affect health or environment.
9. Regionalize materials to ensure cultural sensitivity and relevance. Make information readily accessible (for example, access for the handicapped and sight- and hearing-impaired) and understandable. Unabridged documents should be placed in repositories. Executive summaries/information sheets should be prepared in layman's language. Whenever practicable and appropriate, translate targeted documents for limited-English-speaking population.
10. Make information available in a timely manner. Environmental Justice stakeholders should be viewed as full partners and Agency Customers. They should be provided with information at the same time it is submitted for formal review to State, Tribal, and/or Federal regulatory agencies.
11. Ensure that personnel at all levels in the Agency clearly understand policies for transmitting information to Environmental Justice stakeholders in a timely, accessible, and understandable fashion.
12. Establish site-specific community advisory boards where there is sufficient and sustained interest. To determine whether there is sufficient and sustained interest, at a minimum, review correspondence files, review media coverage, conduct interviews with local community members and advertise in local newspapers. Ensure that the community representation includes all aspects and diversity of the population. Facilitate organization of the board, and consider providing administrative and technical support to the community advisory board.
13. Schedule meetings and/or public hearings to make them accessible and user-friendly for Environmental Justice stakeholders. Consider time frames that do not conflict with work schedules, rush hours, dinner hours and other community commitments that may decrease attendance. Consider locations and facilities that are local, convenient, and represent neutral turf. Ensure that the facility meets American with Disabilities Act Statements about equal access. Provide assistance for hearing-impaired individuals. Whenever practical and appropriate, provide translators for limited-English speaking communities. Advertise the meeting and its proposed agenda in a timely manner in

** Please note that this checklist was developed by Federal agencies for use by Federal and State agencies. It serves as an example of a process to be followed and does not include regulatory requirements. Please contact the U.S. Environmental Protection Agency Office of Environmental Justice for more information about the public participation process, within the regulatory framework.*

-
- -
 -
 -
 -
 -

Bibliography:

Interim Report of the Federal Facilities Environmental Restoration Dialogue Committee, February 1993, U.S. Environmental Protection Agency and the Keystone Center.

Community Relations in Superfund: A Handbook, January 1992, U.S. Environmental Protection Agency, Documents #EPA-540-R-92-009 and #PB92-963341.

DRAFT Partnering Guide to DoD Environmental Missions, July 1994, Institute for Water Resources, U.S. Army Corps of Engineers.

Improving Dialogue with Communities: A Short Course for Government Risk Communications, September 1991, Environmental Communications Research Program, New Jersey Agricultural Experiment Station, Cook College, Rutgers University.

APPENDIX B

Recommended Reading

General Readings on Environmental Equity

- Albrecht, S.L. 1995. "Equity and Justice in Environmental Decision Making: A Proposed Research Agenda." *Society and Natural Resources*. 8(1): 67-72.
- Been, Vicki. 1994. "Locally Undesirable Land Uses in Minority Neighborhoods: Disproportionate Siting or Market Dynamics?" *Yale Law Journal*, 103(6):1383-1422.
- _____. 1993. "What's Fairness Got to do With It: Environmental Justice and the Siting of Locally Undesirable Land Uses." *Cornell Law Review*, 78(6): 1001-1085.
- Bryant, Bunyan (ed.). 1995. *Environmental Justice: Issues, Policies, and Solutions*. Washington, DC: Island Press.
- Bryant, Bunyan and Paul Mohai (eds.). 1992. *Race and the Incidence of Environmental Hazards: A Time for Discourse*. Boulder, CO: Westview Press.
- Bullard, Robert D. 1990. *Dumping in Dixie: Race, Class, and Environmental Quality*. Boulder: Westview.
- Chase, A.R. 1993. "Assessing and Addressing Problems Posed by Environmental Racism." *Rutgers Law Review*, 45(2): 335-369.
- Commission for Racial Justice, United Church of Christ. 1987. *Toxic Wastes and Race in the United States: A National Report on the Racial and Socioeconomic Characteristics of Communities with Hazardous Wastes Sites*. New York: Public Data Access. Inc.
- Edelstein, Michael R. 1987. *Contaminated Communities: The Social and Psychological Impacts of Residential Toxic Exposure*. Boulder, CO: Westview Press.
- Erickson, Kai. 1994. *A New Species of Trouble: Explorations in Disaster, Trauma, and Community*. New York: W.W. Norton.
- Greenberg, Michael R. 1993. "Proving Environmental Inequity in the Siting of Locally Unwanted Land Uses." *Journal of Risk: Issues in Health and Safety*, 4: 235-252.
- Johnston, Barbara R (ed.). 1994. *Who Pays the Price? The Sociocultural Context of Environmental Crisis*. Washington, DC: Island Press.
- Kasperson, Roger E.(ed.) 1983. *Equity in Radioactive Waste Management*. Boston: Oegleschlager, Gunn, and Hain.
- Sexton, K., et al. 1993. "Environmental Justice - The Central Role of Research in Establishing a Credible Scientific Foundation for Informed Decision Making." *Toxicology And Industrial Health*, 9(5): 685-727.
- Shutkin, William A. and Charles P. Lord. 1995. "Environmental Law, Environmental Justice, and Democracy." *West Virginia Law Review*, 96: 1117-1132.
- Szasz, Andrew. 1994. *Ecopopulism: Toxic Waste and the Movement for Environmental Justice*. Minneapolis: University of Minnesota Press.
- Wenz, Peter S. 1988. *Environmental Justice*. Albany: State University of New York Press.

Environmental Equity and Occupational Health

- Arnold, C.W. 1996. The Occupational Health Status of African-American Women Health Care Workers. *American Journal of Preventive Medicine*. 12(5): 311-5.
- Au, William W. 1991. Monitoring Human Populations for Effects of Radiation and Chemical Exposures Using Cytogenic Techniques. *Occupational Medicine: State of the Art Reviews* 6(4): 597-611.
- Au, William W., Richard G. Lane, Marving S. Legator, Elbert B. Whorton, Gregg S. Wilkinson, and Gary J. Gabehart. 1995. Biomarker Monitoring of a Population Residing Near Uranium Mining Activities. *Environmental Health Perspectives* 103(5): 466-470.
- Christian, C.L., Werley, B. Smith, A., Chin, N., and Garde, D. 1994. Comparison of employees' white blood cell counts in a petrochemical plant by work site and race. *Journal of the National Medical Association*. 86(8): 620-3.
- Devesa, S.S., Grauman, D.J., Blot, W.J. 1994. Recent cancer patterns among men and women in the United States: clues for occupational research. *Journal of Occupational Medicine* 36(8):832-41.
- Dula, A., Kurtz, S., Samper, M.L. 1993. Occupational and environmental reproductive hazards education and resources for communities of color. *Environmental Health Perspectives* 101 Suppl 2: 181-9.
- Mendelsohn, Mortimer L. 1995. The Current Applicability of Large Scale Biomarker Programs to Monitor Cleanup Workers. In M.L. Mendelsohn, J.P. Peeters, and M.J. Normandy, eds. *Biomarkers and Occupational Health: Progress and Perspectives*. Washington, DC: Joseph Henry Press. Pp. 1-6.
- Roscoe RJ, Deddens JA, Salvan A, Schnoor TM. 1995. Mortality Among Navajo Uranium Miners. *American Journal of Public Health* 85:535-540.
- Schnitzer, P.G., Olshan, A.F., Erickson, J.D. 1995. Paternal occupation and risk of birth defects in offspring *Epidemiology* 6(6): 577-83.
- Schulte, Paul. 1995. Introduction: The Role of Biomarkers in The Prevention of Occupational Disease. In M.L. Mendelsohn, J.P. Peeters, and M.J. Normandy, eds. *Biomarkers and Occupational Health: Progress and Perspectives*. Washington, DC: Joseph Henry Press. Pp. 1-6.
- Sever, Lowell E., Ethel S. Gilbert, Nancy A. Hessol, and James M. McIntyre. 1988. A Case-Control Study of Congenital Malformations and Occupational Exposure To Low-Level Ionizing Radiation. *American Journal of Epidemiology* 127: 226-242.
- Sinnaeve, Jaak, and Ken H. Chadwick. 1995. Biomarkers- A Perspective from the Commission of the European Communities. In M.L. Mendelsohn, J.P. Peeters, and M.J. Normandy, eds. *Biomarkers and Occupational Health: Progress and Perspectives*. Washington, DC: Joseph Henry Press. Pp. 20-24.
- Taylor, S.E., Repetti, R.L., and Seeman, T. 1997. Health psychology: what is an unhealthy environment and how does it get under the skin? *Annual Review of Psychology* 48: 411-47.
- Wing, SA., Shy, C. Wood, J. et al. 1991. Mortality Among Workers at Oak Ridge National Laboratory: Evidence of Radiation Effects in Follow-Up Through 1984. *Journal of the American Medical Association* 265(11): 1397-1402.

Public Participation in Environmental Health Research

- American Medical Association Council on Scientific Affairs. 1989. Low-level radioactive wastes. *Journal of the American Medical Association* 262(5): 669-74.
- Applegate, John S, and Douglas J. Sarno. 1997. FUTURESITE: an environmental remediation game- simulation. *Simulation-and-Gaming* 28(1): 13-28.
- Brown, P. 1992. Popular Epidemiology and Toxic Waste Contamination: Lay and Professional Ways of Knowing. *Journal of Health and Social Behavior* 33: 267-281.
- Burger, E.J. Jr. 1988. Scientific information in judicial and administrative systems. *Social Science and Medicine* 27(10): 1031-41.
- Burke, Thomas A., Nadia M. Shalauta, and Nga L. Tran. 1995. Strengthening the Role of Public Health in *Environmental Policy*. *Policy Studies Journal* 23(1): 76-84.
- Cvetkovich, George, and Timothy C. Earle. 1994. The construction of justice: A case study of public participation in land management. *Journal of Social Issues*. 50(3): 161-178.
- Fiorino, D.J. 1990. Citizen Participation and Environmental Risk: A Survey of Institutional Mechanisms. *Science, Technology, and Human Values* 15(2): 226-243.
- Guidotti, T.L. 1994. Critical science and the critique of technology. *Public Health Reviews* 22(3-4): 235-50.
- Hale, Edgar O. 1993. Successful public involvement. *Journal of Environmental Health* 55(4): 17-20.
- Harr, Jonathan. 1995. *A Civil Action*. New York: Random House.
- Levin, L. S.. 1995. Duncan Memorial Lecture. Public participation in health care quality. *Journal of Epidemiology and Community Health* 49(4): 348-53.
- Lum, Max R. 1995. Environmental Public Health: Future Direction, Future Skills. *Family and Community Health* 18(1): 24-35.
- McCallum, David B., Sharon Lee Hammond, and Vincent T. Covello 1991. Communicating about Environmental Risks: How the Public Uses and Perceives Information Sources. *Health Education Quarterly* 18(3): 349-361.
- Minkler, M., ed. 1997. *Community Organizing and Community Building for Health*. New Brunswick, NJ: Rutgers University Press.
- O'Neill, M., and A.P. Pederson. 1992. Building a methods bridge between public policy analysis and healthy public policy. *Canadian Journal of Public-Health* 83(Suppl 1): S25-30.
- Orosz, E. 1994. The impact of social science research on health policy. *Social Science and Medicine* 39(9): 1287-93.
- Park, P., M. Brydon-Miller, et al., eds. 1992. *Voices of Change: Participatory Research in the United States and Canada*. Westport, CT: Bergin & Garvey.
- Rayner, S. 1987. Risk and relativism in science for policy. In B. Johnson and V. Covello, eds, *The Social and Cultural Construction of Risk* New York: Reidel. Pp. 5-23.
- Richards, R.W. 1995. *Building Partnerships: Educating Health Professionals for the Communities They Serve*. New York: Jossey Bass.
- Stoto, M., C. Abel, et al., eds. 1996. *Healthy Communities: New Partnerships for the Future of Public Health*. Washington, DC: National Academy Press.
- Vaughan, Elaine. 1993. Individual and cultural differences in adaptation to environmental risks. *American Psychologist* 48(6): 673-680.
- Villanueva, A.B. 1996. The politics of waste management. *Journal of Social Political and Economic Studies* 21(2): 205-21.
- Wolfe, Amy K. 1993. Risk Communication in Social Context: Improving Effective Communication. *The Environmental Professional* 15: 248-255.

ADDITIONAL RESOURCES:**I. Environmental Justice & Public Participation:**

- A. Office of Environmental Justice
U.S. EPA (2201A)
401 M Street SW
Washington, D.C. 20460
(202) 564-2515
environmental-justice-epa@epamail.epa.gov
<http://es.inel.gov/oeca/oeljbut.html>
- B. DOE-EH Office of Environmental Policy and Assistance Web Site:
<http://tis-nt.eh.doe.gov/oepa>
- C. EPA Superfund Page: <http://www.epa.gov/superfund/>
- D. *Guidance for Addressing Environmental Justice Under the National Environmental Policy Act* (Draft), Council on Environmental Quality, Executive Office of the President, April 15, 1996.
- E. *Guidance for Incorporating Environmental Justice in EPA's NEPA Compliance Analyses* (Draft), US Environmental Protection Agency, July 12, 1996.
- F. EM Restoration Quarterly Program Report, *Factoring Risks to Remediation Workers into the DOE CERCLA Decision Process*, August 4, 1995.
- G. EPA National Environmental Justice Advisory Council: <http://www.prcemi.com/nejac/>
- H. The Ecojustice Network:
<http://www.igc.apc.org/envjustice>
- I. Environmental Organizations and Issues Worldwide:
<http://www.webdirectory.com/>
- J. Center for Environmental Management Information:
<http://www.em.doe.gov/stake/center.html>
- K. USDOE Public Reading Rooms at the Forrestal Building in Washington DC and all major Operations Offices
- L. LandView III, a CD-ROM publication that provides database extracts to map jurisdictions, roads, and population centers, along with environmental data:
http://www.epa.gov/swerosps/bf/html-doc/lv3_des4.htm
and <http://rtk.net.landview>

II. Occupational Health and Safety

- A. National Institute on Occupational Safety and Health :www.cdc.gov/niosh/
- B. *Environmental Health Monthly*:
www.envirolink.org/seel/cchw/ehm